

COMPATIBILITY DETERMINATION

Use: Wildlife Observation and Wildlife Photography

Refuge Name: Mingo National Wildlife Refuge

Establishing and Acquisition Authority(ies): Migratory Bird Conservation Act and Refuge Recreation Act

Refuge Purpose(s): For use as an inviolate sanctuary or for any other management purpose, for migratory birds, and for (1) incidental fish and wildlife-orientated recreational development, (2) the protection of natural resources, (3) the conservation of endangered species or threatened species.

In the Wilderness Area, to preserve wilderness character and devote to the public purposes of recreational, scenic, scientific, educational, conservation and historical use as primary refuge objectives permit.

National Wildlife Refuge System Mission: “The Mission of the National Wildlife Refuge System is to administer a national network of lands and waters for the conservation, management, and where appropriate, restoration of the fish, wildlife, and plant resources and their habitats within the United States for the benefit of present and future generations of Americans.”

Description of Use: Wildlife observation and photography are priority public uses of the Refuge System. In 2012, wildlife observation and photography accounted for nearly 70,000 visits to the Refuge. Typical use is by individuals, family groups, and large groups. Wildlife observation and photography are becoming increasingly popular activities for visitors, and a source of economic growth for many local communities. The Refuge provides outstanding wildlife viewing opportunities due to the abundance of eagles, ducks, warblers, herons and other birds, deer, scenic vistas, and a congressionally designated Wilderness Area. The public and communities desire more opportunities for these uses.

In 2012, nearly 8,500 visits occurred to the Wilderness Area, primarily for photography and wildlife observation opportunities. Most of these visits were from visitors utilizing the 15 mile Ozark Highlands Auto Tour Route (ATR). The ATR runs from the spillway to Ditch 3 and connects with Sanblow Ridge Road. This road provides visitors with a unique look into a variety of habitats and provides opportunities for wildlife observation and photography for 9 months every year. Red Mill Drive, Bluff Road to the Spillway, and Sand Blow Ridge Road, encompassing 14 miles, are available throughout the year for driving access and wildlife observation and photography.

The Swampwalk Nature Trail is an interpretive 1.0-mile trail that leads to a platform overlooking Rockhouse Marsh. This is a popular birding, photography, and wildlife observation destination. In 2012, over 12,000 visits to the Swampwalk Nature Trail occurred. In addition, Hartz Pond Trail, Bluff Trail, and Sweet’s Cabin Trail are available for wildlife observation and photography.

Several foot bridges are available across several ditches to promote access for wildlife observation and photography. In addition to roads and hiking trails, the Refuge provides facilities to support wildlife observation and photography including observation platforms and vistas, benches, a canoe trail, photography blinds, overlook pavilion, and parking areas. These facilities offer outstanding wildlife viewing opportunities due to the abundance of wildlife and scenic splendor.

Availability of Resources: Infrastructure exists on the Refuge to support wildlife observation and photography activities. Overlooks are placed in areas that provide consistent wildlife viewing opportunity with minimum disturbance to wildlife. The construction and maintenance of Refuge roadways, kiosks, benches, overlook platforms, pavilion, scenic vistas, traffic counters, the Swampwalk Nature Trail and other trails are the principle expense associated with this activity along with law enforcement activities to ensure proper compliance with Refuge regulations while conducting these activities.

Currently, the Refuge has one permanent visitor services staff member. Present staffing allows for coordinating wildlife observation and photography programs, but limits the number of facilitated programs. Maintaining the public use facilities is part of routine management duties. Currently staff and funding is available. Additional facilities and visitors services specialists, as proposed in the Comprehensive Conservation Plan, will enhance public opportunities for these uses and improve the quality and quantity of opportunities.

To help track, regulate, and analyze effects and impacts of the use, Special Use Permits are issued for groups exceeding 10 individuals and/or when programs are conducted independently of Refuge staff. Administering Special Use Permits for groups exceeding 10 individuals increases overall costs of Refuge operations, including but not limited to: development and review of policy and procedure, yearly administration of permits (inquiries, screening applicants, issuing permits), and enforcement of permit conditions. In the short-term, existing staff is adequate. However, the number of permits issued will have to be limited in balance with staff resources. In the long-term, additional administrative and/or other personnel as identified in the Comprehensive Conservation Plan will be needed.

Anticipated Impacts of the Use: Disturbance of wildlife is the primary concern regarding these uses. There is little disturbance to migrating waterfowl because these activities are prohibited in areas where waterfowl concentrate during annual migrations. Wildlife disturbance at other times and throughout the Refuge is more difficult to assess. Studies by Blumstein¹ and Blumstein et al.² show that 'flight-initiation-distance' varies by species and intruder starting distance as well as by things such as flock size, angle of approach, time of year, time of day, reproductive state, distance to refuge, and type of disturbance. Given these complexities, it is not possible to determine the level of disturbance generated by each activity. It is likely there is a zone of influence on either side of existing travel ways where some level of wildlife disturbance occurs from all sources.

There are no specific studies regarding wildlife disturbance at Mingo, but in a study conducted in and around Boulder, Colorado, Miller et al.³ found that composition and abundance of birds were altered adjacent to trails in both grassland and forest ecosystems. The authors noted the cause could be the physical presence of the trail, associated human

disturbance, or both factors acting in concert. These effects, for most bird species, were largely confined to a zone of influence extending approximately 250 feet on either side of trails and may be less pronounced in areas with less human development and recreational use than the study area.

We applied this concept as one measure of potential wildlife disturbance along travel ways open to wildlife observation and wildlife photography at Mingo. The table below shows amount of travel ways open to these activities as well as the associated zone of influence (250 feet on either side of travel ways) in both acres and percentage of the Refuge. These travel ways are also open to interpretation, special events, horseback riding, hiking, recreational biking, and jogging. In any month, less than 10 percent of the Refuge is affected by these activities.

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Miles Open	15	15	31	31	31	31	31	31	31	31	31	15
Acres Affected	909	909	1,879	1,879	1,879	1,879	1,879	1,879	1,879	1,879	1,879	909
Percent of Refuge Affected	4.2	4.2	8.7	8.7	8.7	8.7	8.7	8.7	8.7	8.7	8.7	4.2

The Swampwalk Nature Trail (1 mile), Hartz Pond Trail (.2 miles), and a trail leading to Sweet's Cabin (1.5 miles) are also open to wildlife observation and wildlife photography. The zone of influence totals approximately 164 acres (.76 percent of the Refuge) for these additional trails.

¹Blumstein, D.T. 2003. Flight initiation distance in birds is dependent on intruder starting distance. *J. Wildl. Manage.* 67:852-857.

²Blumstein, D.T., L.L. Anthony, R.G. Harcourt, and G. Ross. 2003. Testing a key assumption of wildlife buffer zones: is flight initiation distance a species-specific trait? *Biological Conservation* 110:97-100.

³Miller, S. G., R. L. Knight, and C. K. Miller. 1998. Influence of recreational trails on breeding bird communities. *8(1):162-169*

Public Review and Comment:

Determination:

☐ Use is Not Compatible

☒ Use is Compatible with Following Stipulations

Stipulations Necessary to Ensure Compatibility: The following stipulations are required to ensure compatibility:

1. Along the 15 mile Ozark Highlands Auto Tour Route, vehicular access from March 1 through November 30 will occur except for closure during Refuge quota hunts and as needed for reptile and amphibian migrations.
2. Bluff Road, Red Mill Drive, and Sandblow Ridge Road will be open year-round to vehicular traffic.
3. Portable observation/photography blinds may be erected in open portion of the Refuge, but must be removed daily.
4. A portion of the Refuge west of Ditch 6 is available for use year-round.
5. A portion of the Refuge east of Ditch 6 to the eastern boundary of the Refuge will be available from March 1st until September 30th.
6. From November 1 to March 1, the area between Ditch 4 and Ditch 6 south of Monopoly Marsh and north of Ditch 11 will be closed to all public use, except Refuge Quota hunts, to provide an area free from wildlife disturbance.
7. Groups greater than 10 individuals are required to possess a Special Use Permit.
8. Permanent photo/observation blinds will be administered through a reservation system.

Justification: Wildlife observation and photography are compatible wildlife dependent activities. They do not materially interfere with or detract from the fulfillment of the National Wildlife Refuge System mission or the purposes of the Refuge. The disturbance from these activities is limited to approximately 10 percent or less of the Refuge, and they enhance the connection and appreciation of wildlife and wild lands to Refuge visitors. These visitors are potential partners and a potential source of support for the Refuge and the Refuge System. Disturbance from these activities is not expected to adversely impact wildlife populations. Most wildlife observation is confined within a set distance from existing roadways, and in some locations infrastructure helps to concentrate the use in areas that can allow wildlife observation and photography opportunities at safe distances and that minimize wildlife disturbance.

Refuge Manager: _____
(Signature and Date)

Regional Chief Concurrence: _____
(Signature and Date)

Mandatory 10- or 15-year Re-evaluation Date: 2023